What is claimed is :

1. An apparatus for outputting a plurality of output frames according to a plurality of corresponding input frames, comprising:

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5   input frame and a plurality of second sampling positions for a second input frame, wherein said first sampling positions and said second sampling positions are not substantially the same; and

    a decision unit for outputting a first output frame through sampling said first input frame according to said first sampling positions and
10   outputting a second output frame through sampling said second input frame according to said second sampling positions.

2. The apparatus of claim 1, further comprising:

    a data buffer for receiving the output of the decision unit , and outputting said output frame.

15 3. The apparatus of claim 1, wherein at least one of said first sampling positions is not included in said second sampling positions.

4. The apparatus of claim 1, wherein the resolution of said first input frame and the resolution of said first output frame are different.

5. The apparatus of claim 4, wherein the resolution of said first input frame
20   is larger than the resolution of said first output frame.

6. The apparatus of claim 1, wherein said first input frame can be reproduced according to said first output frame and said second output frame.

7. The apparatus of claim 1, wherein each of said first and second sampling
25   positions is chosen according to an offset value respectively, wherein said offset value of said first sampling positions is 1/4, and said offset value of said second sampling positions is 3/4.

8. The apparatus of claim 1, wherein each input frame comprises a plurality of horizontal lines, and each horizontal line comprises a plurality of
30   pixels, wherein said selector further comprises:

a horizontal pixel selector for selecting a plurality of first sampling pixel positions of each horizontal line of the first input frame and a plurality of second sampling pixel positions of each horizontal line of the second input frame; and

5   a horizontal line selector for selecting a plurality of first sampling horizontal line positions of the first input frame and a plurality of second sampling horizontal line positions of the second input frame .

9. The apparatus of claim 8, wherein each of said first and second sampling pixel positions is chosen according to an offset value respectively, 10   wherein said offset value of said first sampling pixel positions of is 0, and said offset value of said second sampling pixel positions is M/N-1, wherein M is the number of horizontal pixels of said input image, and N is the number of horizontal pixels of said output image.

10. The apparatus of claim 8, wherein each of said first and second sampling 15   horizontal line positions is chosen according to an offset value respectively, wherein said offset value of said first sampling horizontal line positions is 0, and said offset value of said second sampling horizontal line positions is M/N-1, wherein M is the number of horizontal lines of said input image, and N is the number of horizontal lines of said 20   output image.

11. The apparatus of claim 1, wherein said selector includes a flip-flop.

12. A method for sampling input image and outputting an output image, said input image comprising a plurality of image frames, each image frame comprising a plurality of pixels, said method comprising steps of:

25   selecting a plurality of first sampling positions for a first input frame and a plurality of second sampling positions for a second input frame, wherein said first sampling positions and said second sampling positions are not substantially the same; and

outputting a first output frame through sampling said first input frame 30   according to said first sampling positions and outputting a second output frame through sampling said second input frame according to said second sampling positions.

13. The method of claim 12, wherein at least one of said first sampling positions is not included in said second sampling positions.

14. The method of claim 12, wherein the resolution of said first input frame and the resolution of said first output frame are different.

15. The method of claim 12, wherein said output image includes a first set of first output frames generated through sampling the first input frames according to said first sampling positions and a second set of second output frames generated through sampling the second input frames according to said second sampling positions.

16. The method of claim 12, wherein each of said first and second sampling positions is chosen according to an offset value respectively, wherein said offset value of said first sampling positions is 1/4, and said offset value of said second sampling positions is 3/4.

17. The method of claim 12, wherein each input frame comprises a plurality of horizontal lines, and each horizontal line comprises a plurality of pixels, wherein step of selecting comprises:

selecting a plurality of first sampling pixel positions of each horizontal line of the first input frame and a plurality of second sampling pixel positions of each horizontal line of the second input frame; and

selecting a plurality of first sampling horizontal line positions of the first input frame and a plurality of second sampling horizontal line positions of the second input frame.

18. The method of claim 17, wherein each of said first and second sampling pixel positions is chosen according to an offset value respectively, wherein said offset value of said first sampling pixel positions is 0, and said offset value of said second sampling pixel positions is equal to M/N-1, wherein M is the number of horizontal pixels of said input image, and N is the number of horizontal pixels of said output image.

19. The method of claim 17, wherein each of said first and second sampling horizontal line positions is chosen according to an offset value respectively, wherein said offset value of said first sampling horizontal line positions is 0, and said offset value of said second sampling

horizontal line positions is M/N-1, wherein M is the number of horizontal lines of said input image, and N is the number of horizontal lines of said output image.

20. An apparatus for sampling an input image and outputting an output image, said input image comprising a plurality of input frames, each of said input frames comprising a plurality of pixels, said apparatus comprising:

a frame decision unit for grouping said input frames into at least a first set and a second set of input frames; and

a pixel selector, coupled to said frame decision unit, for sampling the first set of input frames according to a plurality of first sampling positions, and sampling the second set of input frames according to a plurality of second sampling positions;

wherein the first sampling positions and the second sampling positions are not substantially the same.